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COMPLETE SPECIFICATION

Apparatus for Packing Articles such as Tablets, Bonbons or other Solid or Semi-solid Bodies

I, ERICH WETZEL, a German citizen of 144 Hirschstrasse, Karlsruhe, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the 5 method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates generally to apparatus of the type which packs articles, 10 e.g. tablets, bonbons or other solid or semi-solid bodies between two strips of suitable wrapping which are brought together and sealed around each article in turn. Suitable 15 wrappings are transparent cellulose-foil, aluminium foil, paper or the like or a combination thereof which can be stuck together by the application of pressure or of pressure and heat.

Known apparatus of this type has the disadvantage that the article is held in position 20 by retaining fingers or the like which extend through one of the strips of wrapping so that the article is not hermetically packed. Other known forms of apparatus of this type 25 employ pusher or similar reciprocating members for feeding the articles and as a result the output capacity of such apparatus is not very high.

It is an object of the present invention to 30 provide apparatus of the type referred to which does not suffer from the disadvantages above mentioned.

According to this invention there is provided apparatus of the type referred to for 35 packing articles, comprising two co-operating rollers shaped so as, when rotating in conjunction, to define repeatedly a pocket between them to receive one of said articles, and feed means disposed above said rollers 40 and operative to release articles successively in predetermined timed relationship with the rotation of said rollers so that each article enters said pocket between two strips of wrapping as they are brought together one 45 around each roller, said strips being sealed around said article by passage between said

rollers, in which said feeding means comprise a feed channel or conduit and two pivotally mounted retaining fingers disposed 50 one above the other and rockable into and clear of said conduit or channel, the distance apart of said fingers being such and their rocking being so correlated that the lower finger releases one article while the remainder of 55 the articles are held by the upper finger and the upper finger rocks clear of said conduit or channel only when the lower finger is positioned in said channel or conduit to prevent an article falling between said rollers.

If desired several feeding means may be 60 arranged side-by-side, the said rollers being so shaped as when rotating in conjunction repeatedly to define a corresponding number of pockets therebetween, each suitable to receive one of said articles from each of said 65 feeding means. As a result of such an arrangement the output capacity of the apparatus can be greatly increased.

In contrast to some known constructions, 70 the articles each fall freely between the rollers to be packed and hence damage to the articles by mechanical pushers or other feeding means is avoided. The falling time of each article is unaffected by the number of 75 articles remaining in the feeding means and hence can be accurately determined for any position of the feeding means, so that the feeding means can be set to operate to release said particles in predetermined timed 80 relationship to the rotation of said rollers to ensure that each article is released at precisely the right moment for it to pass between the rollers within a said pocket defined thereby whilst simultaneously the wrappings are sealed therearound by passage between the 85 rollers.

In order that the invention may be readily understood there will now be described by way of example only one preferred embodiment thereof with reference to the accompanying diagrammatic drawings in which:—

Fig. 1 is a side elevation of the apparatus;

and

Fig. 2 is a front elevation thereof showing some additional details not indicated in Fig. 1.

Two strips of a suitable wrapping 1, 2 are each taken from a roll (not shown), brought together one around each of two rollers 3, 4 and fed between the rollers. The rollers 3, 4 one of which is resiliently urged toward the other, each have two annually disposed series of spaced recesses therein. The recesses 5 of one roller 3 co-operate with the recesses 6 of the other roller 4 so as when the rollers 3, 4 rotate in conjunction repeatedly to define therebetween a pocket suitable to receive a tablet 13 to be packed. It will be appreciated that if in order to seal the particular wrapping in use both pressure and heat are required, then either or both rollers may incorporate one or more electrical heating elements whose temperature may be regulated by thermostats.

The tablets 13 to be packed are fed by suitable sorting apparatus (not shown) into the two conduits 7 each serving one series of recesses in the rollers 3, 4. The conduits 7 each terminate immediately above the line of contact of the rollers 3, 4.

Each conduit 7 has a longitudinal slot therein through which retaining fingers 14, 15 may enter to retain the tablets 13 there-within. The retaining finger 14 is carried at the lower end of a lever 8 which is actuated via a lever arm 9 by a cam or the like (not shown). The finger 15 is disposed below the finger 14 and is carried at the lower end of a lever 11 which is also actuated via a further lever 32 by a cam disc 33 or other means. It will be seen that the retaining fingers are spaced so that the finger 15 may support one tablet 13 within the conduit 7 whilst the other finger 14 supports the remainder of the tablets. The finger 14 is arranged to extend within the conduit 7 to about a third the diameter of the tablet 13.

It will be seen that alternate actuation of the fingers 15, 14 will serve to release successively a single tablet 13 from the conduit 7. Similar retaining fingers are provided for each conduit 7 and the joint operation of each pair of fingers is ensured by a suitable mechanical linkage therebetween indicated diagrammatically in dotted lines on Fig. 2. The actuation of the retaining fingers in operation is so timed in relation to the rotation of the rollers that each tablet is released at precisely the right moment for it to pass between the rollers within a pocket defined by co-operating recesses 5, 6 thereof whilst simultaneously the strips 1, 2 are sealed therearound in passing between the rollers and the double strip of sealed tablets leaves the apparatus in a downward direc-

tion.

Although one preferred embodiment has been described it will be appreciated that modifications and alterations thereto may be made within the scope of the invention as defined in the appended claims. Thus, for example, instead of providing recesses in both rollers, they may be provided in one roller only particularly if different strips of wrapping are used one, of which is relatively inelastic. Further although reference has been made throughout the specification to an article to be packed it will be appreciated that an article may comprise two or more units. Thus in the preferred embodiment described by suitable spacing of the retaining fingers 14, 15, two tablets might be released each 80 time and would thus constitute an article to be packed.

What I claim is:—

1. Apparatus of the type referred to for packing articles, comprising two co-operating rollers shaped so as, when rotating in conjunction, to define repeatedly a pocket between them to receive one of said articles, and feed means disposed above said rollers and operative to release articles successively in predetermined timed relationship with the rotation of said rollers so that each article enters said pocket between two strips of wrapping as they are brought together one around each roller, said strips being sealed around said article by passage between said rollers, in which said feeding means comprise a feed channel or conduit and two pivotally mounted retaining fingers disposed one above the other and rockable into and clear of said conduit or channel, the distance apart of said fingers being such and their rocking being so correlated that the lower finger releases one article while the remainder of the articles are held by the upper finger and the upper finger rocks clear of said conduit or channel only when the lower finger is positioned in said channel or conduit to prevent an article falling between said rollers.

2. Apparatus as claimed in Claim 1, in which two or more feeding means are arranged side-by-side, the said rollers being so shaped as when rotating in conjunction repeatedly to define a corresponding number of pockets therebetween each suitable to receive one of said articles from each of said feeding means.

3. Apparatus of the type referred to for packing articles, substantially as described with reference to the accompanying drawings.

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Fig. 1.

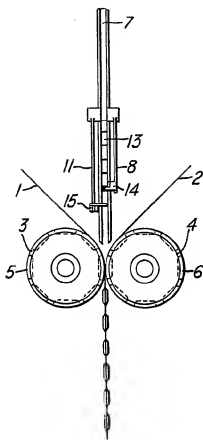


Fig. 2.

